

PHN16019A

35 U.S.C. §103Claim 8

In the Office Action dated 18 March 2002, claim 8 was rejected under 35 U.S.C. §103 over Atkins et al. U.S. Patent 5,162,742 ("Atkins"). Applicants respectfully traverse that rejection for at least the following reasons.

Among other things, the method of claim 8 includes a feature wherein:

"a voltage over a segment of the signal line is measured and . . . the determination of the current is carried out on the basis of the voltage and the resistance of the segment of the signal line."

(emphasis added).

No such feature is disclosed in Atkins. Atkins discloses measuring a voltage between contact pads 12. Hypothetically assuming, *arguendo*, that the Examiner's assertion is correct and that the contact pads 12' and 12" and the resistor R qualify as a "signal line" under claim 8, Atkins absolutely does not determine the current carried by that supposed "signal line" on the basis of the voltage and the resistance of a segment of the signal line as required by claim 8.

Indeed, in direct contrast to the claimed method, Atkins plainly teaches that the current is determined by direct measurement with the series ammeter 38. Here is a direct quote from Atkins that clearly states how the current is measured by Atkins:

PHN16019A

As is shown in FIG. 6 a constant current is then applied to contact pads 12' and 12'' from current source 30 while the current is measured by ammeter 38 and the voltage across contact pads 12' and 12'' is measured by voltmeter 36. Recognizing that the 25

col. 3, lines 21-25.

Thus, Applicants respectfully submit that Atkins could not possibly be any more clear in teaching that the current should be measured by an ammeter 38, and not by measuring a voltage over a segment of the signal line is measured and determining the current on the basis of the voltage and the resistance of the segment of the signal line.

The present invention teaches that the current through a signal line is measured in a "non-invasive way" (page 4, line 5). For example, the specification discloses that "the supply current in a supply line can be measured without any additional components in the supply line" (page 4, lines 15-16) (emphasis added). In direct contrast, as shown in FIG. 5, Atkins teaches that an ammeter 38 is connected in series with the supply line to measure the current.

Moreover, the claimed method is not even possible with Atkins. Indeed, Atkins very specifically teaches that in its method the resistance R will increase with increasing current (see, e.g., col. 3, lines 35-37, 44-45), thus causing the voltage to vary nonlinearly with current (Abstract at lines 6-7; col. 3, lines 42-44). Therefore, in Atkins there is a nonlinear relationship between current and voltage (Abstract at lines 10-11) and current cannot be determined simply by measured voltage and resistance.

PHN16019A

So it is not even possible for Atkins to determine the current on the basis of the voltage and the resistance of a segment of a signal line (thus, Atkins uses the series ammeter 38!).

In response to paragraph 5 of the Office Action, Applicants respectfully submit that according to the disclosure of Atkins, the claimed method will not produce the desired result. So, indeed, Atkins clearly teaches away from the claimed method. See M.P.E.P. § 2141.02 (prior art must be considered in its entirety, including disclosures that teach away from the claims).

Accordingly, for at least the foregoing reasons, Atkins cannot possibly anticipate the method of claim 8, and it is respectfully submitted that the method of claim 8 is clearly patentable over Atkins.

Claim 13

Claim 13 was also rejected under 35 U.S.C. §103 over Atkins. Applicants respectfully traverse that rejection for at least the following reasons.

Among other things, the integrated circuit of claim 13 includes a feature that:

*"the current-measuring device comprises a voltage measuring device
for measuring a voltage over a segment of the signal line."*

As explained above with respect to claim 8, the only current measuring device disclosed by Atkins is the ammeter 38 connected in series with the current source. Atkins teaches the use of the series ammeter 38 because in Atkins it is not possible to

PHN16019A

measure the current through the path 12'-R-12" using the voltage measuring device 36, as the resistance R is not constant.

Accordingly, for at least the foregoing reasons, Atkins cannot possibly anticipate the integrated circuit of claim 13, and it is respectfully submitted that the method of claim 8 is clearly patentable over Atkins.

CONCLUSION

In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims 8 and 13, and pass the application to issue.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

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Respectfully submitted,

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